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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,753	01/23/2002	Frederick K. Blades	GDAES118459	7335

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EXAMINER

LAIR, DONALD M

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,753

Applicant(s)

BLADES, FREDERICK K.

Examiner

Donald M. Lair

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 6-14, 15, 32-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 16-20, 22, 24-28, 30 and 42 is/are rejected.
- 7) ☒ Claim(s) 21, 23, 29 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 6. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Claims 1 – 5, 16 – 31, 39, and 42 in Paper No. 7 is acknowledged; however, Claim 39 is directed to the non-elected species (Species II) and has been withdrawn from consideration.

Double Patenting

2. Claims 16 – 20, 22, and 24 of this application conflict with claim 1, 3 – 6, and 8 of Application No. 10/167,671. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

3. Claims 16 and 22 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

4. Claim 17 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 3 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

5. Claim 18 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 4 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

6. Claim 19 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 5 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

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7. Claim 20 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 6 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

8. Claim 24 rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 8 of prior U.S. Patent No. 10/167,671. This is a double patenting rejection.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 25 – 28, 30, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haines (US-4,835,479) in view of DiSalvo et al. (US-2002/0006022).

11. In regards to Claims 25, and 42, Haines discloses a method for detecting parallel arcing faults in a set of wires comprising the steps of selecting a first wire of the set of wires and defining the first wire as a wire under test while grounding the remaining wires in the set of wires to define these remaining wires are ground wires, charging a capacitance defined between the wire under test and the ground wires (Column 5, line 67 – Column 6, line 23; Column 6, lines 36 – 41 and 64 – 68). The reference fails to disclose charging the capacitance using a current source and calculating the distance to a parallel arcing fault on the wire under test. Haines teaches using a voltage source to charge the capacitance between the wire under test and the ground wires, and since both a voltage source and current source are capable of charging a capacitance between conductors, replacing the voltage source with a current source for the

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purpose of charging a capacitance would be within the level of ordinary skill in the art (MPEP 2144.07).

12. DiSalvo et al. disclose a method of detecting arcing faults, and further calculating the distance to a parallel arcing fault wherein the distance is calculated by determining the difference in arrival times among two or more emitted signals (Paragraph 134, lines 1 – 8). Specifically, the method of acquiring the arrival times is implemented by placing one receiver at one terminal of the wire under test and another receiver at the other terminal of the wire under test, and calculating the difference in the arrival time of one leading edge receive at the one receiver and the arrival time of the other leading edge received at the other receiver (Paragraphs 134 – 137).

13. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the arc fault detector disclosed by Haines by calculating the distance to a parallel arcing fault by determining the difference in arrival times amount two or more emitted signals as disclosed by DiSalvo et al. for the purpose of pinpointing the location of an arc fault.

14. In regards to Claim 26, Haines discloses a method comprising all of the elements described above, wherein the act of finding includes uncoupling the remaining wires in the set of wires when a parallel arcing fault occurs (Column 5, line 67 – Column 6, line 63).

15. In regards to Claim 27, Haines discloses a method comprising all of the elements described above, wherein the act of finding includes coupling one wire of the remaining wires to ground while floating the rest of the remaining wires and reexecuting the act of charging to repeat the occurrence of the parallel arcing fault (Column 6, lines 24 – 63).

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16. In regards to Claim 28, Haines discloses a method comprising all of the elements described above, wherein the act of finding includes iterating the acts described above until the method finds the wire in the set of remaining wires that causes the parallel arcing fault to occur between the wire under test and the wire in the set of remaining wires (Column 6, lines 24 – 68).

17. In regards to Claim 30, Haines discloses a method comprising all of the elements described above, further comprising isolating the wire under test and the wire found by the act of iterating by coupling the wire under test to the current source and coupling the wire found by the act of iterating to ground while floating all other wires of the set of wires (Column 6, lines 24 – 63).

18. Claims 1 – 5, 16, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steiner (US-5,083,086) in view of Haines.

19. In regards to Claims 1 – 5, 16, 22, and 24, Steiner discloses a device for detecting arcing faults comprising a controller for receiving information and for processing the information to produce a number of control signals (Fig 1A, element 28), a current source having a first terminal coupled to the controller and a second terminal coupled to a first node (Fig. 1A, element 14), wherein it is clear that the circuit diagram of Fig. 1A must be a simplified representation, and a timing circuit having a first terminal coupled to the first node and a second terminal coupled to the controller, the timing circuit being receptive to the incident waveform and the reflected waveform at the first terminal so as to measure the pulse width of the incident waveform and the reflected waveform and produce at the second terminal a locating signal being proportional to the distance from the device to the parallel arcing fault (Abstract; Column 4, lines

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41 – 66). Steiner fails to specifically teach using the disclosed device to test multiconductor cables, but does disclose that it is desirable to do so (Column 2, lines 15 – 20).

20. Haines discloses an apparatus for detecting parallel arcing faults in a set of wires capable of implementing the steps of selecting a first wire of the set of wires and defining the first wire as a wire under test while grounding the remaining wires in the set of wires to define these remaining wires are ground wires, charging a capacitance defined between the wire under test and the ground wires (Column 5, line 67 – Column 6, line 23; Column 6, lines 36 – 41 and 64 – 68).

21. Since Steiner discloses a device for testing cables for arc faults and the desirability of testing multiconductor cables, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention disclosed by Steiner to apply a signal to a wire under test while grounding the remaining wires of the set of wires as disclosed by Haines for the purpose of implementing the desired functionality of testing multiconductor cables.

Allowable Subject Matter

22. Claims 29 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

23. The following is a statement of reasons for the indication of allowable subject matter: In regards to Claims 29 and 31 the limitations of these claims are not taught by the prior art of record and there is not sufficient motivation to add these further limitations to the claims.

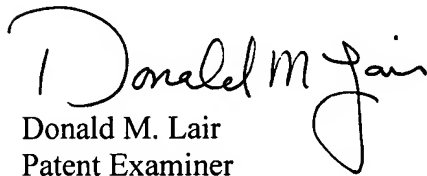
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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald M. Lair whose telephone number is (703) 305-4450. The examiner can normally be reached on Monday - Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1436.



Donald M. Lair
Patent Examiner
Art Unit 2858
June 10, 2003



JAY PATIDAR
PRIMARY EXAMINER